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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,507	03/28/2005	Harold Davis	G0699.70001US00	6153

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THE ADAMS LAW FIRM
901 RIO GRANDE BLVD. NW SUITE H262
ALBUQUERQUE, NM 87104

EXAMINER

SCHEUERMANN, DAVID W

ART UNIT	PAPER NUMBER
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2834

MAIL DATE	DELIVERY MODE
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06/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/529,507	Applicant(s) DAVIS ET AL.	
	Examiner David W. Scheuermann	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/18/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 4, 5, 7, 12-14, 19, 20, 22-24, 26-38, 40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 8-11, 15-18, 21, 25 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3/28/05</u> | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Election/Restrictions

Acknowledgement is made of the election of Species I with traverse in the paper filed on 4/18/2007. Applicant asserts that, the magnets of figure 12 are "...substantially coplanar ... claim is therefor is allowable." This argument is not germane to the argument of a proper restriction because the limitation in claim 12 of "wherein each of the first, second, third and fourth magnets has a first magnetic pole **facing toward** the equilibrium location....," emphasis added, is present in only non-elected species II. In all, claims 12,13 14 and 24 read on Species II, figure 1A. Accordingly the restriction requirement is made final with the election of Species I. Claims 1-3,6,8-11,15-18 21, 25, and 39 read on Species I.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the width W1 (claim 18) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 8-11, 21 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Whitehead, US 5168183. Whitehead, US 5168183 shows:

Apparatus for levitating a magnetic element 10, the apparatus comprising:

at least two magnets (any two of 14, 16, 18 or 20) arranged to generate a static

magnetic field providing a position-dependent potential energy of interaction with a magnetic element, the static magnetic field providing an equilibrium location wherein the potential energy decreases for displacements of the magnetic element away from the equilibrium location along an unstable axis and increases for displacements of the magnetic element away from the equilibrium location in any direction perpendicular to the unstable axis;

a position sensor (32) generating a feedback signal indicative of the location of the magnetic element on the unstable axis;

an electromagnet configured to generate a control magnetic field upon the passage of an electrical current through the electromagnet (see figure 9), the control magnetic field having a gradient with respect to displacements along the unstable axis at the equilibrium location; and,

a controller connected to receive the feedback signal and to control the electrical current in the electromagnet to prevent the magnetic element from leaving a vicinity of the equilibrium location (see abstract).

Re claims 2 and 3, note electromagnetic coil sections 30, column 9. lines 24-28 and figure 5.

Re claim 6, see figures 5 and 6.

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Re claims 8-11, note that the center of each of magnets 14, 16, 18 and 20 form a diamond pattern with magnets 14 and 16 closer than magnets 18 and 20. Furthermore, note the spacing constraints set forth in the paragraph bridging columns 9 and 10.

Re claim 21, see figure 5.

Re claim 39, note the dimensional constraints set forth in figure 5 and the paragraph bridging columns 9 and 10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitehead, US 5168183 in view of Bosley, US 4585282. Whitehead, US 5168183 discloses the invention substantially as claimed as set forth in the rejection of claim 1, supra. Whitehead, US 5168183 does not expressly disclose, "...wherein the at least two magnets comprise permanent magnets" or "...wherein the at least two magnets are all permanent magnets" or "... wherein the electromagnet comprises at least two coils spaced along an axis parallel to the unstable axis and a first one of the at least two coils extends around the first magnet and a second one of the at least two coils extends around the second magnet" or "...where the at least two coils of the electromagnet each have a width W1 along the axis parallel to the unstable axis equal to an equilibrium height D3, wherein the equilibrium height D3 is a distance between the equilibrium position and a plane passing through the at least two coils."

Bosley, US 4585282 discloses the combination of a permanent magnet 30 surrounded by an electromagnet force coil 32, for the inherent purpose of reducing the overall dimensions of the device. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to surround magnets 14,16,18 and 20 making them fit inside electromagnets 30 of Whitehead, US 5168183 as taught by Bosley, US 4585282. One of ordinary skill in the art would have been motivated to do this to reduce the overall dimensions of the device.

Re the specific dimensional limitations of two coils of the electromagnet each have a width $W1$ along the axis parallel to the unstable axis equal to an equilibrium height $D3$, wherein the equilibrium height $D3$ is a distance between the equilibrium position and a plane passing through the at least two coils would have been discoverable through routine experimentation to optimize performance and as such do not patentably define over the art of record. The courts have established via, *in re Aller*, 105 USPQ 238 (CCPA 1955) the courts have established that, "...even though applicant's modification results in great improvement and utility over prior art, it may still not be patentable if modification was within capabilities of one skilled in art; more particularly, where general conditions of claim are disclosed in prior art, it is not inventive to discover optimum or workable ranges by routine experimentation.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Whitehead, US 5168183 in view of Fox, US 5319670. Whitehead, US 5168183 discloses the invention substantially as claimed as set forth in the rejection of claim 8, *supra*. Whitehead, US 5168183 does not expressly disclose, "...wherein the first, second, third and fourth permanent magnets are permanent magnets selected from the group consisting of NdFeB, Barium Ferrite, Samarium Cobalt and AlNiCo magnets." Fox, US 5319670 discloses use of Barium Ferrite magnets in a levitating device, for the purpose of avoiding heating from eddy current, see the paragraph bridging columns 3 and 4. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use Barium Ferrite permanents in the device of Whitehead,

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US 5168183 as taught by Fox, US 5319670. One of ordinary skill in the art would have been motivated to do this to avoid eddy current heating.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David W. Scheuermann whose telephone number is 571-272-2035. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached at (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



dws
June 9, 2007



KARL TAMAI
PRIMARY EXAMINER